REMARKS

The present application is a continuation of International Application Number PCT/US99/26965 filed 16 November 1999, which is a continuation-in-part of commonly owned co-pending United States Patent Application Number 08/666,757 filed 19 June 1996. The specification has been amended to reflect this status. The present application amends dependent claims 4, 12-14, 16, 21, 23-25, 29-31, 39, and 44-45, to remove multiple dependencies. The filing fee for the present application was calculated at the small entity rate based on entry of this preliminary amendment. An attachment of marked-up changes on pages separate from the amendment is included in accordance with 32 C.F.R. §1.121 now in effect.

A favorable International Preliminary Examination Report was received for the patent International Application. Accordingly, it is believed that claims 1-45 are in condition for allowance. Reconsideration of the present application as amended is respectfully requested. Timely action towards a notice of allowability is hereby solicited. The Examiner is encouraged to contact the undersigned by telephone to resolve any outstanding matters concerning the present application.

Respectfully submitted:

L. Scott Paynter, Reg. No. 39,797
Woodard, Emhardt, Naughton
Moriarty & McNett
Bank One Center Tower
11 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456

ATTACHEMENT OF MARKED-UP CHANGES UNDER 37 CFR 1.121

Please remove and replace the first paragraph on page 1 of the Application with the following paragraph:

This application is a continuation of commonly owned International Patent Application Number PCT/US99/26965 filed 16 November 1999, which is a continuation-in-part of commonly owned, co-pending United Stated Patent Application Serial No. 08/666,757, filed 19 June 1996 to Feng et al., and entitled BINAURAL SIGNAL PROCESSING SYSTEM AND METHOD.

Please amend dependent claims 4, 12-14, 16, 21, 23-25, 29-31, 39, and 44-45 as follows:

4. (Amended) The method of claim 1 [any of claims 1-3], wherein said localizing includes filtering with a number of coincidence patterns each corresponding to one of a number of predetermined spatial positions relative to the first and second sensors, the patterns each providing phantom position information that varies with frequency relative to the one of the predetermined spatial positions.
desired signal to an analog output form for said output device.

12. (Amended) The system of claim 9 [any of claims 9-11], wherein said delay operator, said localization operator, and said extraction operator are provided by a solid state signal processing device.

13. (Amended) The system of claim 9 [any of claims 9-11], wherein said desired source signal is determined as a function of said interfering signals.

14. (Amended) The system of claim 9 [any of claims 9-11], wherein said interfering source signals are each determined from a unique pair of said delayed signals.

16. (Amended) The system of claim 9 [any of claims 9-11], wherein said output device is configured to provide an acoustic output representative of said desired source.

21. (Amended) The method of claim 17 [any of claims 17-20], wherein said localizing includes filtering with the coincidence patterns to enhance true position information with phantom position information.

23. (Amended) The method of claim 17 [any of claims 17-20], wherein the first sensor and second sensor are part of a hearing aid device and further comprising adjusting the delayed signal pairs with a head-related-transfer function.

24. (Amended) The method of claim 17 [any of claims 17-20], further comprising:

extracting a desired signal after said localizing; and

suppressing a different set of frequency components for each of a selected number of the sources to reduce noise.

25. (Amended) The method of claim 17 [any of claims 17-20], wherein the positions each correspond to an azimuth established relative to the first and second sensors and further comprising generating a map showing relative location of each of the sources.

29. (Amended) The system of claim 26 [any of claims 26-28], wherein said output device is configured to provide a map of acoustic source locations.

30. (Amended) The system of claim 26 [any of claims 26-28], wherein said delay operator and said localization operator are defined by an integrated solid state signal processor.

31. (Amended) The system of claim 26 [any of claims 26-28], wherein said localization operator responds to said delay signals to determine a closest one of said positions for one of said sources as a function of at least one of said delayed signals corresponding to said closest one of said positions and at least two other of said delayed signals corresponding to other of said positions, said at least two other of said delayed signals being determined with a corresponding one of said coincidence patterns.

39. (Amended) The system of claim 34 [any of claims 34-38], wherein each of said delayed first signals corresponds to one of a number of first taps from a first delay line, and each of said delayed second signals corresponds to one of a number of second taps from a second delay line.

44. (Amended) The method of claim 41 [any of claims 41-43], further comprising repositioning the first and second sensors to extract a third signal from a third signal source.

45. (Amended) The method of claim 41 [any of claims 41-43], wherein said establishing includes:

(a1) delaying each of the first and second signals by a number of time intervals to generate a number of delayed first signals and a number of delayed second signals; and

(a2) comparing each of the delayed first signals to a corresponding one of the delayed second signals, each of the spectral signals being a function of at least one of the delayed first signals and the delayed second signals.